



THIS IS EOLAS

EOLAS

THE IRISH SCIENCE AND TECHNOLOGY AGENCY

A major objective of the Government is to increase investment in science and technology to a level comparable with the EC average. This investment will raise the technological capability of Irish industry and the research and development potential of the Higher Education sector.

The national approach to technology based growth requires that we make the most of our available skills and resources. This means the selection of priority technologies in which Ireland can hope to play a leading role. It also requires a sensitivity that we must balance scientific progress with the protection of our environment.

The programmes and services at EOLAS reflect the commitment and investment made by the Government and underline the importance we attach to science and technology in addressing the challenges of economic development.



Michael Smith TD

Minister for Science and Technology



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Cover: Photograph of a polished mineral sample taken on an electron microscope using the back scattered electron signal to produce a black and white grey-scale image. This was computer enhanced to produce the colour image



EOLAS is the State Agency responsible for the development and promotion of science and technology. Its primary objective is to contribute to the development of industry through the application of science and technology which have now emerged as being among the strongest innovative forces in modern society. They are now regarded as key elements in the growth of manufacturing and service industries. It follows that effective and efficient development and application of S+T is essential if Ireland is to be successful in meeting the competitive challenge of the Internal Market.

All indicators of international comparison show a wide and unfavourable technological gap between the average of our Common Market partners and ourselves. There is, therefore, an urgent requirement to raise the technological capacity of Irish

*Professor
G T Wrixon*

THE EOLAS STRATEGY

Promote the development of a permanent technical innovation capacity in individual companies

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Enhance value added in products by improving quality, design and product development

*

Improve manufacturing efficiency

*

Take advantage of the new wave of products and processes that will emerge from new technologies

*

Strengthen the capacity of researchers in the Higher Education Sector both to attract industry to Ireland and to support firms here now

*

Maximise the benefits of involvement in EC and other international S+T programmes

*

Maintain an active national capability in basic science and the formation of advanced technical skills

*

Encourage the establishment of new technology based firms

*

Ensure that industrial development is compatible with the protection of the environment

industry if we are to achieve the objectives set out in the Programme for National Recovery.

An examination of Ireland's industrial structure shows that industry is dominated by small and medium sized enterprises.

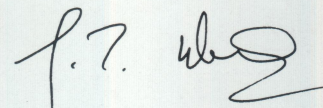
Approximately 6,000 out of a total of 7,400 manufacturing companies employ fewer than 50 persons. Less than 160 companies have a workforce in excess of 500. Most Irish companies do not have the specialist technical

resources which are essential to sustain technological advance.

Against this background EOLAS has evolved a strategy to ensure the availability and application of technology to industry. This is outlined in the panel.

In pursuing this strategy EOLAS works in close partnership with the Higher Education system, and the Office of Science and Technology (Department of Industry & Commerce).

This booklet explains the broad scope of the EOLAS technological initiatives. These initiatives are aimed at developing science and technology in Ireland and at harnessing science and technology for Ireland's industrial development.



G T WRIXON *Chairman*

This is EOLAS

EOLAS – the Irish Science and Technology Agency stands at the heart of the development of Ireland's technological infrastructure.

It manages the national drive to strengthen S+T capabilities in industry and the Higher Education sector. It acts as an umbrella body for initiatives in many disciplines, overseeing the development and application of scientific skills and technological resources in ways which maximise the benefits to industry and the economy as a whole. It informs the science and technology community in Ireland about international developments and coordinates Irish participation in international programmes and projects.

EOLAS is a state organisation, established under the 1987 Science and Technology Act and operating under the direction of a board appointed by the Minister for Industry and Commerce. The members of this board are drawn from industry, the trade union movement,

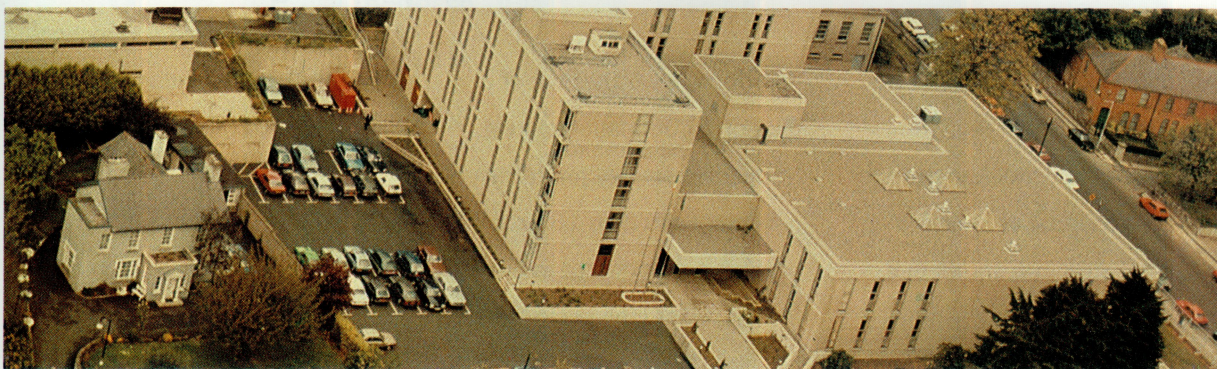
Higher Education and the public service.

The Agency has a staff of 475 and is funded by a combination of state finance and fees earned through services for clients. Approximately 60% of its activities are funded through the Office of

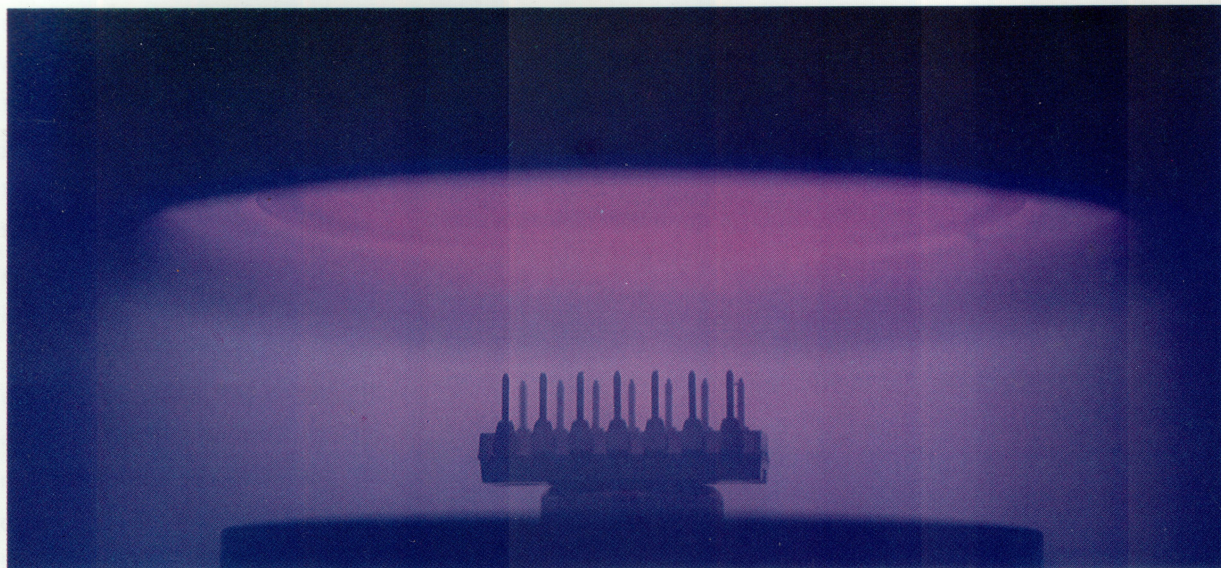
Science and Technology, a division of the Department of Industry and Commerce.

By working together with other state agencies and the Higher Education sector, EOLAS contributes to the provision of a comprehensive range of support services for commercial enterprises. It helps with research and development, conformance with standards and provides access to facilities and equipment which individual companies cannot afford by themselves.

The Agency is also responsible for basic and applied research projects in the third level colleges, laying the foundations for



*Gold coating of
silicon chip prior to
examination by
scanning electron
microscope at
EOLAS*



future industrial support services and the creation of new technology-based firms.

EOLAS is made up of many departments and divisions, performing a wide range of roles from strategic planning and the identification of emerging technological opportunities to laboratory services and on-the-ground support for companies in the regions. This booklet explains how all the limbs of the S+T body work together to fulfil common objectives.



EOLAS, working closely with the Office of Science and Technology, contributes to the formulation of science and technology policy. This responsibility makes the Agency a thinktank for planning national initiatives.

Aware that the components in Ireland's technological mix are changing all the time, EOLAS monitors the emergence of new concepts and techniques. It assesses their strategic significance and follows their development from basic research ideas to their practical application in industry and commerce. It advises the Minister for Science and Technology on the implications of technical change, identifying priority areas for new policies and planning initiatives. EOLAS consults with academics and industrialists to draw up proposals for action programmes and submits these to the Minister.

As the country prepares to meet the challenges posed by the Single European Act, Ireland's technology policy is more important than ever before. Inseparable from the main thrust of economic development, it underpins all strategies for growth in employment and incomes. A primary goal is to increase investment in the lead up to 1992.

EOLAS is working to meet this objective. The Agency regularly submits proposals for specific S+T initiatives and programmes and, in preparation for the Single

European Market, it has also drawn up a comprehensive set of proposals for raising the technological capacity of Irish industry. These recommendations are also designed to support the Programme for National Recovery.

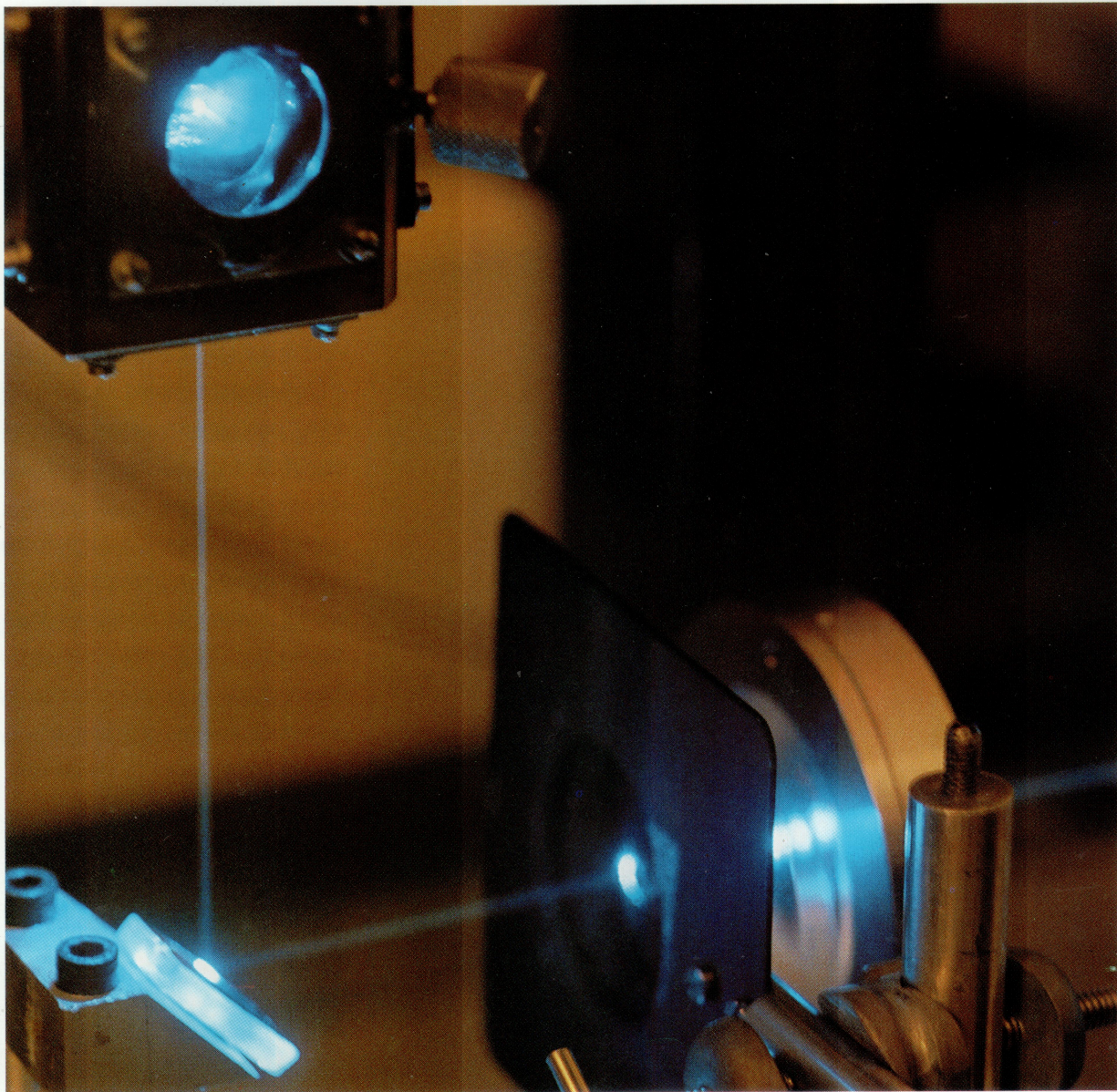
The planning process involves constant liaison with the S+T community in industry, the Higher Education sector and transnational organisations. Through consultation with these practitioners, the Agency identifies priority areas for medium-to-long term development. Particular

attention is given to opportunities for financial leverage through industrial funding or through programmes such as EC research and development initiatives.

EOLAS also monitors and publishes national S+T statistics and supplies data to international organisations. Each year the Agency publishes the Science Budget, which provides a basis for improved co-ordination and decision-making by detailing all S+T activities supported by public funds. EOLAS holds statutory responsibilities for the review and evaluation of these state-financed programmes.



*Laser technology is
bringing versatility
to manufacturing
processes*



Programmes in Advanced Technologies (PATs) are exciting new additions to the science and technology mix in Ireland. Their objective is to channel skills that exist in the Higher Education sector into selected priority areas, and thus to make the country internationally competitive in key niches of technological development. Each PAT consists of one or more centres based in third level colleges, providing expertise to existing companies and acting as breeding grounds for new ventures.

EOLAS selects priority areas for these programmes and provides management and co-ordination services to the PAT centres.

BioResearch Ireland

Skin diseases such as warts and lesions can sometimes be traced to the papilloma virus while another human virus, known as Epstein Barr, causes a form of glandular fever. Noctech, a Galway-based biotechnology company which produces diagnostic kits to identify the causes of both human and animal infections, is developing new techniques to recognise these viruses.

Research for the project is being conducted through a joint programme with the National Diagnostics Centre at University College Galway. Antigens for the

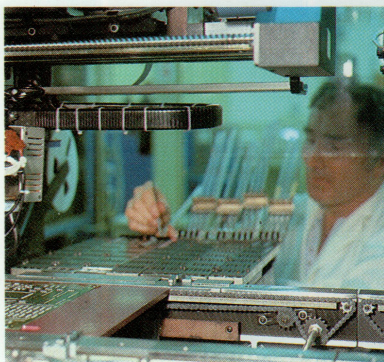
new Noctech kits have been developed on the college campus as the result of this collaboration.

The Galway centre is one of five university-based facilities established since 1987 through BioResearch Ireland, a contract research organisation engaged in applied biotechnology projects for Irish and international companies.

BioResearch Ireland shows how a PAT can commercialise expertise in third level colleges and research institutes. Its activities cover cell and tissue culture, food biotechnology, pharmaceutical projects, veterinary research and diagnostics. Its workplan includes the industrial application of native resources and the diffusion of biotechnology skills to indigenous industry.

More than fifty people, mainly professional researchers and scientists, are employed in this programme.





Advanced Manufacturing Technology

Surface mount technology in electronics plants requires precise control over the quantities of solder paste used on the production line. If there is too much, bridges form between the leads of components. If there is too little, proper bonding may not be achieved. When the Digital Equipment facility in Clonmel needed a technique to check the accuracy of solder paste quantities, the vision and sensor research unit at Trinity College Dublin was able to provide a solution.

Trinity researchers developed an inspection system which

OPTRONICS IRELAND

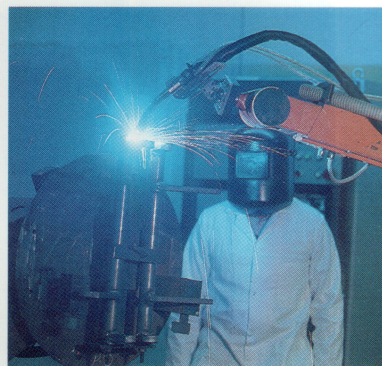
Established in 1989 to promote and co-ordinate the development of expertise in specified areas of optoelectronics technology, Optronics Ireland draws together the research expertise at five universities. This PAT aims to focus Irish skills on the development of devices for controlling communications through optical fibre networks. Its semiconductor modelling, design and development facilities support collaborative and contract R & D and the diffusion of optoelectronics skills to indigenous industries.

directs grids of light onto the solder pads of a printed circuit board. Although the volumes of paste on these pads are tiny, they are able to deflect the light. By measuring these deflections, the system indicates which connections may not have the correct quantity of paste. It is now operational in Digital.

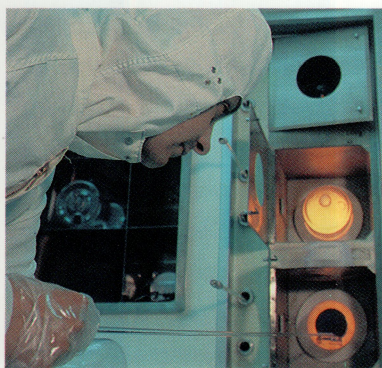
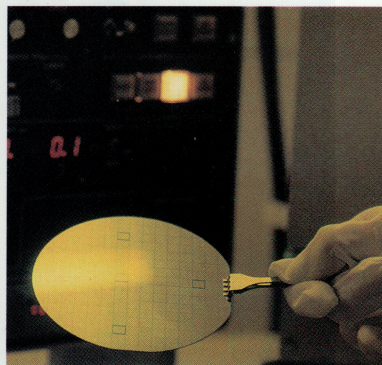
This project illustrates the type of work done in the Advanced Manufacturing Technology programme managed by EOLAS.

Since its establishment in 1988, research units in Irish universities have assisted companies to understand and adopt robotics, machine vision, new electronics production techniques and strategies for computer integrated manufacturing. Each unit carries out contract R & D, offers project management and consultancy services, and provides training for individual firms.

Competitive trends demand that Irish manufacturers take full advantage of techniques which improve quality and cost efficiency. They need to set up effective information systems, achieve shorter production runs, reduce inventory levels and introduce more flexibility to their processes. The Advanced Manufacturing Technology PAT is addressing all these targets.



The Meissner Effect. A magnet levitates over a superconductor in the ceramics laboratory at EOLAS



AN EXPANDING RANGE OF PROGRAMMES

Opportunities for new PATs constantly arise through the emergence of niche technologies that are appropriate for concentrated national efforts. Programmes which already exist or are currently under development include:

National Microelectronics Research Centre

The earliest venture to adopt the PAT approach, the NMRC was established at University College Cork in 1982. The centre carries out contract R & D, provides infrastructural support for the Irish electronics industry and is equipped to undertake all aspects of integrated circuit design and production.

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Telecommunications Equipment

A development programme is proposed to focus on network design and management systems, maintenance and testing tools, and data communications devices.

*

Niches in Microelectronics

Microelectronics Programmes to complement the work already undertaken by the NMRC, are in preparation and will focus on analog circuit design, power electronics and sensor technology.

*

Information Technology

A programme to strengthen the capabilities of the Irish software industry and the development of commercial services based on data processing and communications.

*

Advanced Materials

An industry-oriented programme with special emphasis on precision ceramics components.

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Chemicals and Pharmaceuticals

A programme to support indigenous enterprises in these industries.

EOLAS builds bridges between Irish industry and the Higher Education sector, identifying opportunities for applying skills from the academic world to improve the technical competence of commercial enterprises. The Agency has developed a wide range of support programmes and grant schemes to facilitate this process. Some foster key skills and training capabilities in the universities and regional technical colleges, while others harness graduate talent for innovative R&D in individual companies. Special priority is given to basic research as the foundation for excellence in future applied research.

Strategic Research Programme

Remote sensing by aerial photography and satellite has opened up new techniques in disciplines like mineral exploration and pollution control. At the Department of Forestry in University College Dublin this form of image analysis is also being applied to plan appropriate uses for rural land areas.

In 1986 an inter-disciplinary team of forestry researchers, computer scientists, environmental experts and cartographers commenced a study of the Slieve Bloom mountains. This team first obtained radiance measurements of the area from the Landsat 5 satellite. These were analysed

through an image processing computer at UCD and the researchers devised a classification system which identified ten different land uses from the radiance measurements and assigned an individual colour code to each one. Thus they created maps which estimated how much of the study area was devoted to each land use.

In 1988 the project was extended into a new phase in which the UCD team is developing decision support systems to assist with strategies for optimising land use management.

The EOLAS strategic research programme has funded this work and other university-based projects

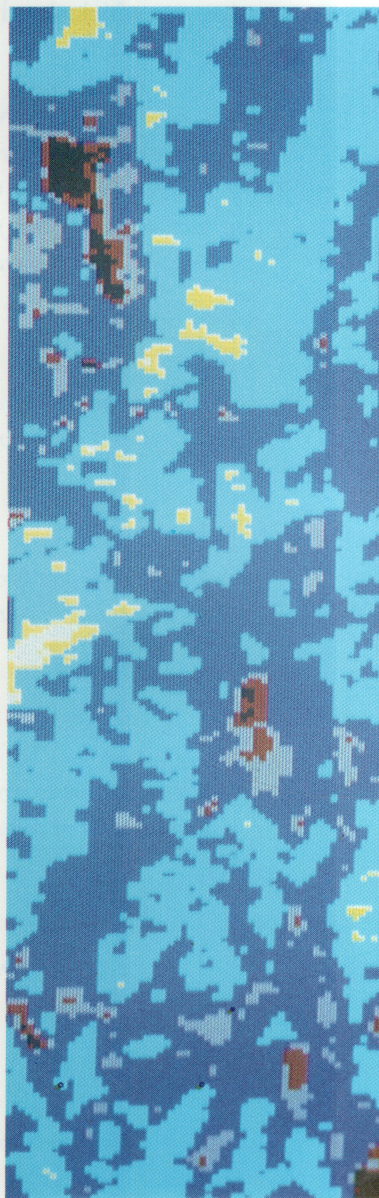


Image analysis is being applied to plan appropriate uses for rural land areas

which direct R&D capabilities towards areas of national importance. The Agency selects priority areas for funding and each year invites proposals from the colleges.

The programme also encourages partnerships between the Higher Education sector and industry and it acts as a training ground for science and engineering graduates, giving them expertise and skills that are relevant to Irish companies.

Inventions Scheme

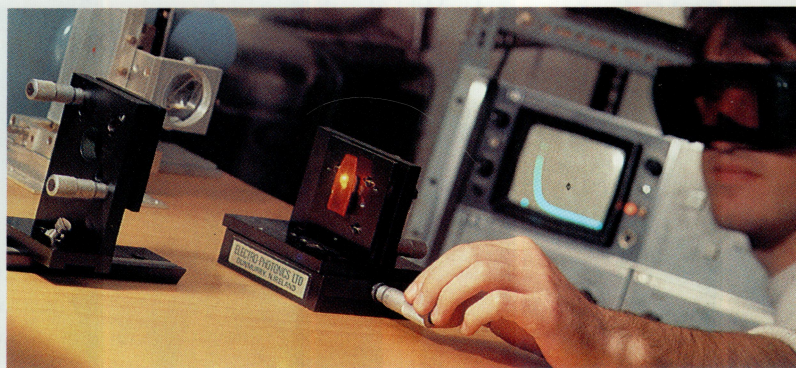
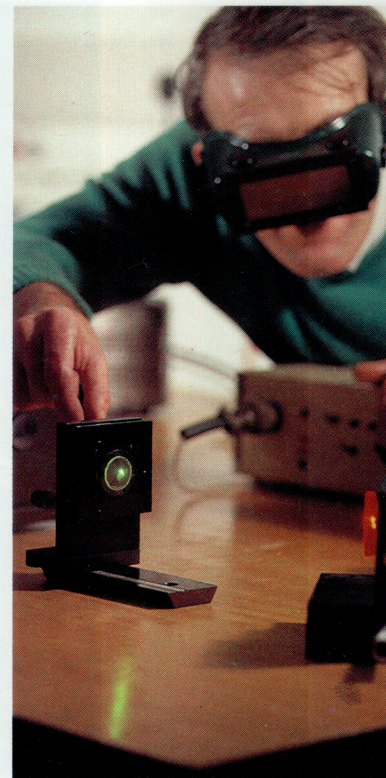
Kleerex International knew that it had a patentable invention on its hands. A shopfitting company which was expanding into the design and manufacture of merchandising products, it had developed modular display and dispensing systems made of clear acrylic.

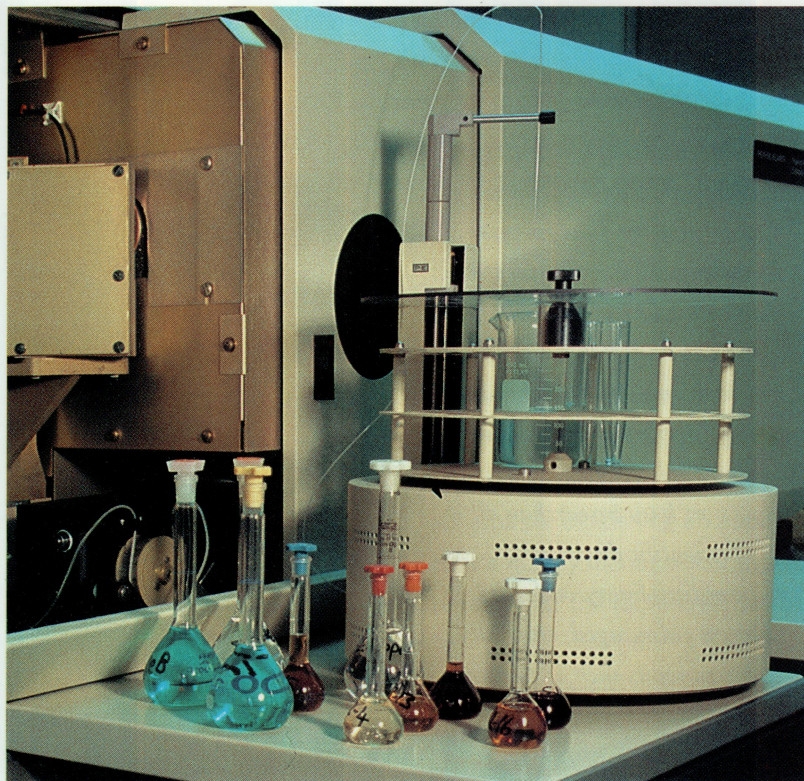
Some of its products, particularly a pick-and-mix unit for loose food-stuffs and a system which displayed flat packages on see-through racks, were strikingly original. Like many small firms, however, Kleerex

BASIC SCIENTIFIC RESEARCH PROGRAMME

Complementing the strategic research programme, this aims to develop the fundamental knowledge base and skills with which the universities will be able to undertake applied research and innovation in the longer term. Academics may submit applications for funds to support basic research in all scientific disciplines.

Interdisciplinary research is always encouraged, especially in broad topics such as environmental science.



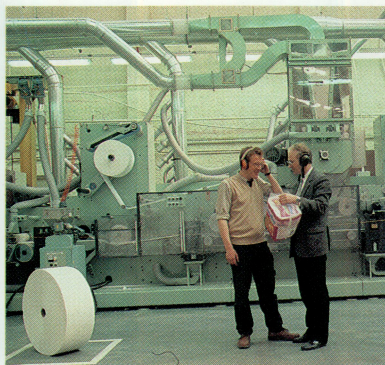


had limited resources and was too busy with marketing and production to give a high priority to the long and complex patenting process.

The EOLAS inventions scheme assists companies and individual inventors in such situations. The Agency selects prototypes with commercial potential and provides funds with which to pay for the filing of patent applications. In return EOLAS negotiates a royalty agreement with the inventor.

Thus Kleerex was able to secure the services of a patent agent, who prepared and submitted applications for patents on the display systems in many countries.

EOLAS has also assisted this company, and others, to identify potential licensing partners in other countries. The inventions scheme has links with similar technology broking services elsewhere and these connections can be used to draw international attention to patented products.



EOLAS SUPPORTS INNOVATION

The strategic research programme and the inventions scheme are just two of the many mechanisms developed by EOLAS to channel funds into key areas of S+T innovation. Support for other projects is provided by:

Graduate Support Programmes

These encourage high quality graduates in science and engineering to pursue postgraduate qualifications in Ireland.

*

Collaborative R&D Support Programmes

These aim to increase the level of cooperation in applied research between the colleges and local industry. Linkages between universities and companies have been supported for a number of years. More recently specific efforts have also been made to help regional technical colleges participate in technology transfer to enterprises in their own areas.

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Industrial Liaison Scheme

This scheme finances the activities of industrial liaison officers in Higher Education establishments. Their role is to promote more effective interfaces between the colleges and industry and involves a broad range of technical services. The initial phase of the scheme covered the universities. Today the industrial liaison process is also operational inside the regional technical colleges.

*

Product and Process Development Scheme

EOLAS and the Industrial Development Authority have joined forces to administer this grant scheme which aims to establish a permanent R&D capability in individual companies. It provides partial funding for innovative product or process development and for technology transfer projects. In line with the overall thrust of the EOLAS grant schemes, it also encourages the participation of researchers from the Higher Education sector.

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Techstart

Techstart assists companies with little or no S+T expertise to employ a young graduate or diploma holder who can help them make better use of technology.

*

Technology Management Scheme

EOLAS runs this scheme to help small and medium sized enterprises with good development potential. It operates partly as a placement programme, securing qualified and experienced people for key project work, and partly as a linkage scheme, establishing contacts between the firm and external sources of expertise. These support mechanisms are designed to enable companies to achieve significant advances in their technological capabilities.

Technical Services

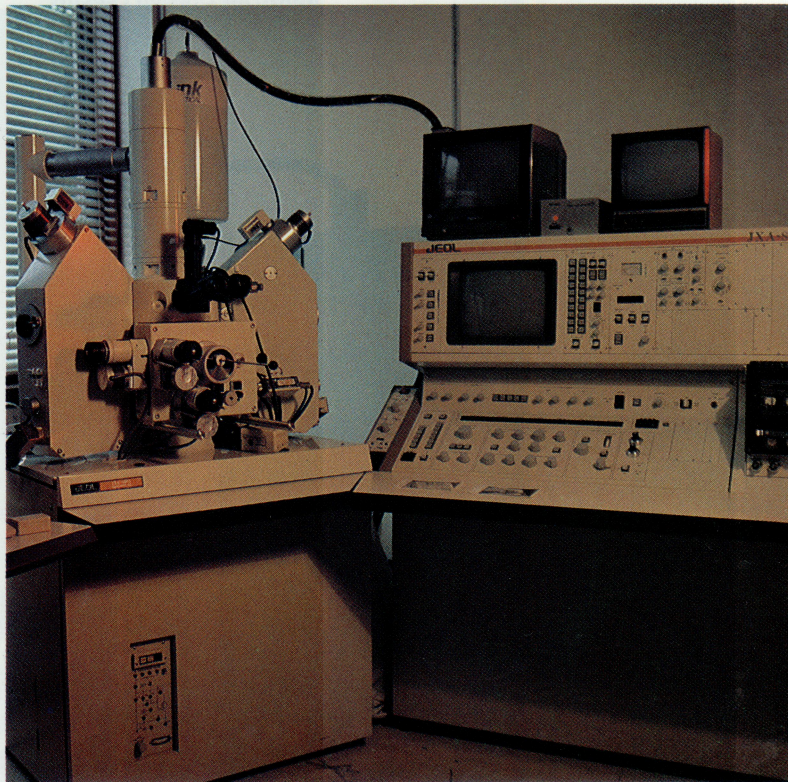
EOLAS has long been aware that the emergence of new products and processes present important challenges to manufacturing industry. Sometimes they entail the introduction of skills previously unknown in the affected firms. Often it is necessary for the companies to call in external advisors or to seek access to rare and expensive instruments and equipment. The Agency is staffed by experts and equipped with facilities for helping industry in such situations. EOLAS offers technical consultancy services in engineering, energy, environment and construction, while its laboratories provide testing, analysis and research capabilities to companies.



National Electrical Test House

Apple Computer turned to the National Electrical Test House (NETH) at EOLAS when it wanted the safety of its Macintosh computer tested to an international standard known as IEC 950. Although testing is not mandatory, manufacturers like Apple seek IEC 950 certification, because it shows that their products comply with the technical requirements of the European market. Thus the company is able to avoid the risk of trade barriers based on technical specifications.

Over a number of years successive Apple models have been submitted to NETH for testing. Apple



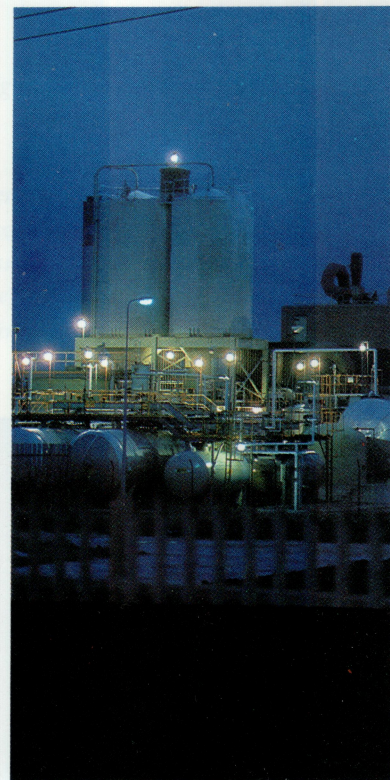
*JEOL Electron
probe x-ray micro-
analyser at EOLAS*

went one step further with its Macintosh IIcx and applied to have the product certified with the Irish Mark of Electrical Conformity. The EOLAS service has established liaison procedures with such companies which avoid delays in the approval cycle. NETH and the National Standards Authority of Ireland, which issues this mark, have encouraged its use by most computer manufacturers with Irish facilities.

Testing the safety of information technology equipment is just one aspect of the work at NETH. It also assesses electronic and electrical equipment and it runs a conformance testing centre for telecommunications products. In addition NETH provides a range of environmental test facilities including temperature cycling, humidity, vibration and mechanical shock. Industrial clients and government bodies employ its testing and evaluation services and, in areas like cable standards and component quality, it conducts assessments and performs a surveillance role on behalf

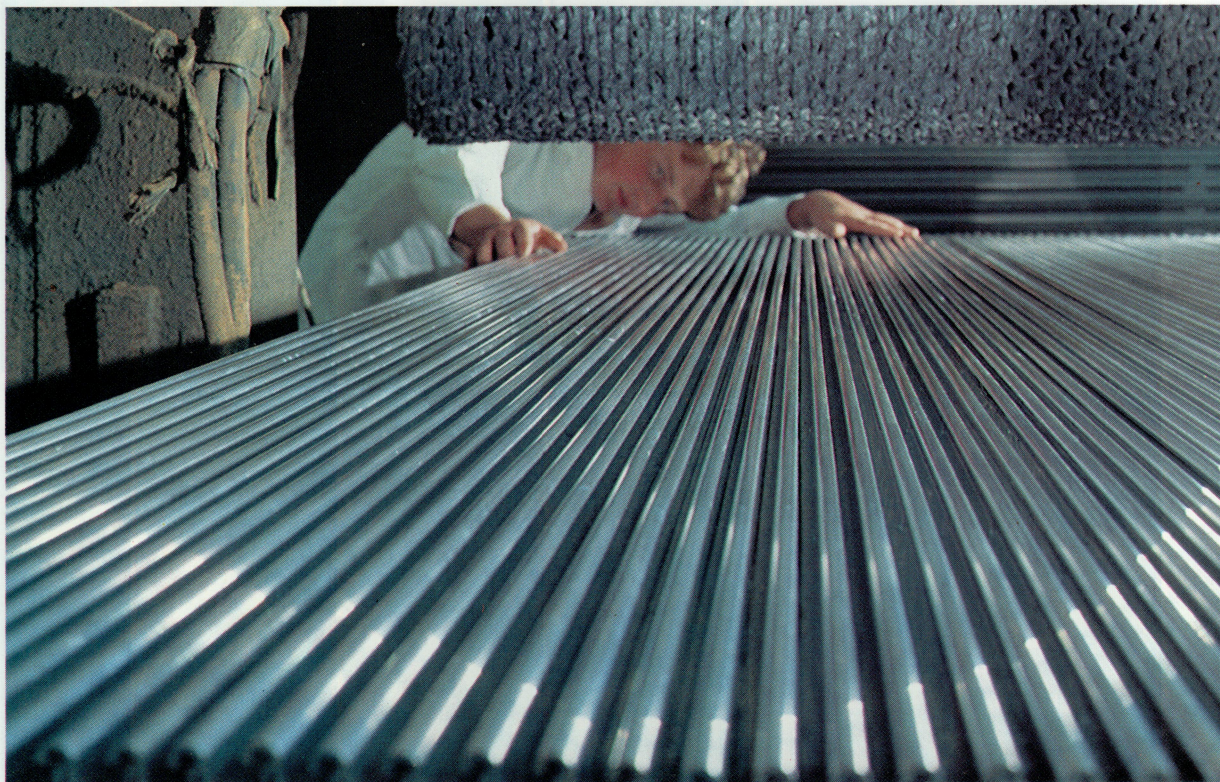
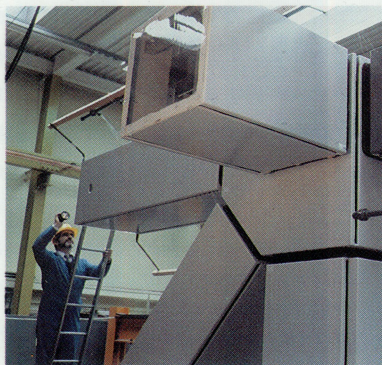
ENVIRONMENTAL CONSULTANCY

Ireland enjoys a valuable reputation as an environmentally clean country. EOLAS specialists play an essential role in maintaining the environmental balance. They run air and water sampling laboratories and carry out extensive field research. In line with EC and national legislative requirements, they conduct environmental impact studies on all major industrial projects that seek Government investment. The consultancy services cover effluents, atmospheric emissions, waste treatment and disposal, toxicity testing, and biological and chemical studies of receiving waters. EOLAS also advises industry on occupational health and safety, hygiene, acoustics and vibration.



of certification bodies, both national and international.

In a technical research project which complements its services, NETH is participating in EC-funded development work on the hardware and software tools required for testing advanced telecommunications equipment.



SERVICES OVERVIEW

The technical support services which EOLAS offers to industry in Ireland include:

Industrial Materials Consultancy

The EOLAS industrial materials programme provides information and technical consultancy to industry and researchers. Its capabilities cover the characterisation of materials, performance and safety testing, the selection of materials for particular applications, and fault and failure analyses.

*

Ceramics Research and Applications

One sector of industrial materials technology has received particular attention at EOLAS. In 1989 the Agency, together with the University of Ulster at Coleraine, established a ceramics research centre to develop the complementary skills of both organisations. This cross-border operation conducts collaborative and contract R&D work with Irish companies and identifies commercial opportunities for applying ceramic materials. In addition to this consultancy work within Ireland, the centre is engaged in EC-funded research related to industrial coatings.

*

Manufacturing Consultancy

Industrial firms turn to EOLAS for advice that can improve their products and processes. Consultants at the Agency can help with the selection and commissioning of plant and equipment, and with the introduction of quality management systems, just-in-time delivery techniques or cost reduction strategies. They also forge contacts for the national linkage programme which encourages manufacturers to work with indigenous sub-suppliers.

*

Energy Investigations

EOLAS undertakes technical feasibility and cost benefit analyses that identify conservation opportunities and effective energy use patterns for industry, commerce and the public sector. The Agency manages and co-ordinates EC research, development and demonstration programmes and its thermal test laboratory supports development and testing of domestic heating and cooking appliances.

*

Construction and Timber Consultancy

Construction programmes, like manufacturing industry, need technical back-up services. EOLAS advises construction companies on codes and regulations in Ireland and abroad, on the selection and testing of materials and systems, and on the investigation of building failure or damage. These services are complemented by a timber programme which provides technical assistance in the use of wood and wood products. Its principal objective is the substitution of imported timber with homegrown materials.

*

Metrology Services

The National Metrology Centre, which operates within EOLAS, provides metrology and high level calibration to meet industrial, commercial, legal and scientific needs. The centre maintains precision reference standards and its instrumentation complies with international units of reference.

The National Standards Authority of Ireland (NSAI) in consultation with all interests, formulates, develops and publishes standards to meet national and international requirements for quality, design, performance and safety of products. NSAI certification is recognised and accepted internationally and the Authority acts as an inspection agent for certification bodies in other countries.

Quality

Industrialists have an increasing interest in recognised measurements of quality and the importance of quality for company image in the marketplace. Traditional forms of certification focus on individual products. The key today lies in a newer approach which concentrates instead on the methods and processes behind the products.

In Ireland this movement started in production facilities run by international companies, then extended out to cover smaller manufacturing firms and, more recently, service and technical support organisations. Some view it as a way of obtaining or maintaining contract business with quality conscious customers. Others regard it as an external

appraisal process that can help them with internal quality management projects.

The target to pursue is the IS/ISO 9000/EN 29000 series of standards and NSAI operates a scheme for assessing an applicant's quality management system against the requirements set

down in this series. Organisations which are not ready to have all aspects of their operations assessed can choose to seek certification for their capabilities in, for example, production and installation or final inspection and test.

Companies that pass the assessment process are registered by NSAI and are entitled to use a 'registered firm' symbol on their documents and packages. This recognition provides ready access to international markets.



HOW NSAI WORKS

In addition to its developmental function NSAI is both a promotional authority, encouraging Irish industry to participate in the formulation of national standards and to adopt them, and an inspection body which assesses whether companies comply with those standards. Its operations include:

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Consultative Committees

NSAI operates consultative committees in partnership with the main industrial sectors. Representatives of firms in areas like healthcare, food, and information technology are able to use these structures to participate in the development of Irish and international standards.

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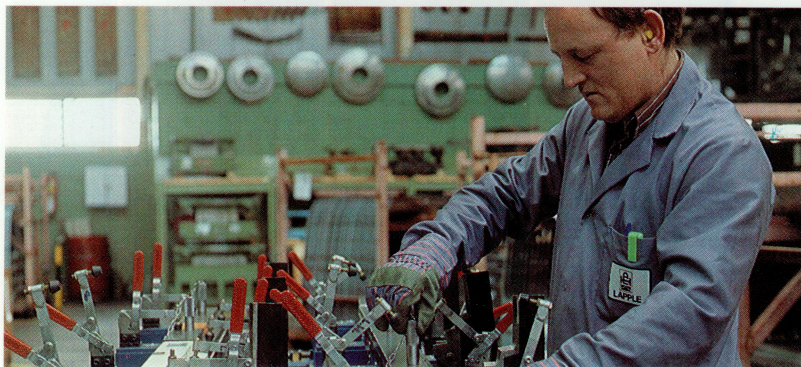
Certification and Accreditation

NSAI has responsibility for quality and product certification. It accredits laboratories under the Irish Laboratory Accreditation Board scheme and it operates the Agrément construction product certification scheme.

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Standards Membership Scheme

The Authority organises meetings, workshops and conferences to brief members on developments in their own areas and to alert them to the standardisation issues associated with the EC internal market.



The European Dimension

EOLAS is the first point of contact for Irish researchers who are interested in participation in European Community S+T programmes or other international initiatives. It directs them towards relevant programmes, helps them to find national and international partners, and provides assistance with the drafting and processing of project applications.

As personnel from the Agency act as national delegates to many of the programme management and advisory committees run by the European Commission, the Agency has first hand knowledge of the objectives and priorities in EC research and development. EOLAS thus aims to secure maximum benefit for Irish S+T interests from international programmes and to ensure that the country plays an active part in setting the agenda for new initiatives.

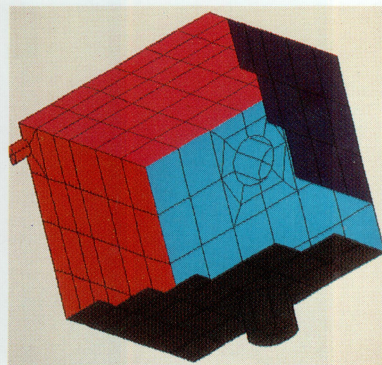
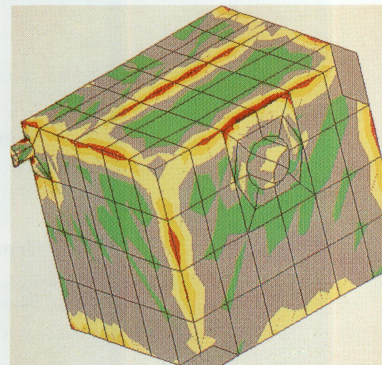
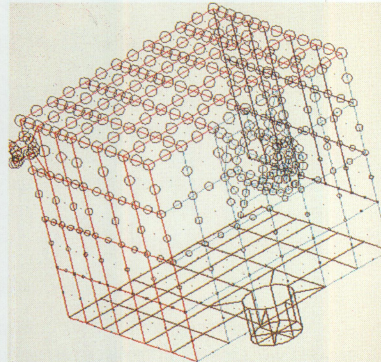
R&D Framework Programmes

For sister companies Tecno Design Engineering and Tecnocad, both based in Sligo, the European Commission's BRITE Programme has provided a springboard into international markets.

In 1985 toolmaking consultants Tecno Design joined a Belgian-German-Irish BRITE consortium to develop computer aided design techniques that add new flexibility to mould manufacturing processes. The project established standards which mould makers can apply to

shorten the set-up time on their production lines and to facilitate the manufacture of smaller batches. Both companies have joined a follow-up programme BRITE-EURAM and are working on an expert system for mould designers. This time around Tecnocad is the prime contractor in an Irish-Belgian-British group.

Ireland's participation rate varies from one programme to another but has been notably high in the ESPRIT information technology initiative and in biotechnology. By contributing to Framework programme projects,



The TeAPot initiative has assessed alternative models of teleworking



Irish organisations can establish partnerships to exploit the opportunities offered by the Single European Market.

In the early nineties it is expected that more than £1.2 billion a year will be spent on Framework initiatives. EOLAS is working to ensure that Irish companies and

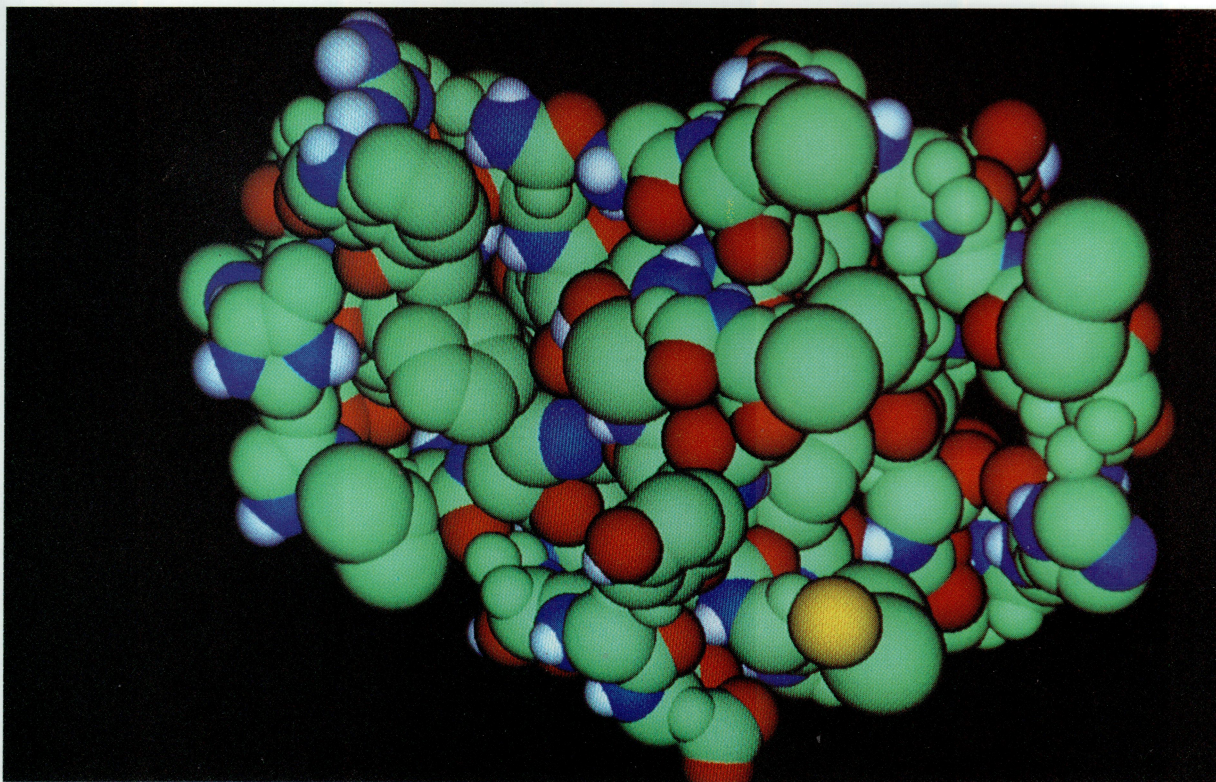
researchers play positive roles in these important programmes.

Regional Development Fund Programmes

Ability Enterprises in Ballindine, Co Mayo is not the only Irish company that offers data entry and text processing services to commercial clients. But the way in which it provides those services is unique.

The organisation, staffed by people with physical disabilities, operates online to its customers and has explored the use of network services to enhance the job opportunities for workers who are less mobile than others. It has also involved itself in database creation, compiling information on the accessibility of places in Ireland for wheelchair users.

This initiative, known as TeAPot (Teleworking Applications and Potential), has been organised by the Work Research Centre and the National Rehabilitation Board as part of the EC-funded STAR



Space-filling computer graphic model of a complex between a new 'host' molecule, synthesised at TCD, and a carbohydrate 'guest'

programme. TeAPot has assessed alternative models of teleworking and, in addition to the Ballindine group, has assisted companies like Telecom Eireann, Digital Equipment, RTE and the Ericsson Group to locate and employ home-based staff.

STAR aims to upgrade tele-

communications in the peripheral regions of Europe and has assigned responsibility to EOLAS for the evaluation and promotion of new network services in Ireland. In addition to the teleworking project, the programme is supporting local service centres in several parts of the country

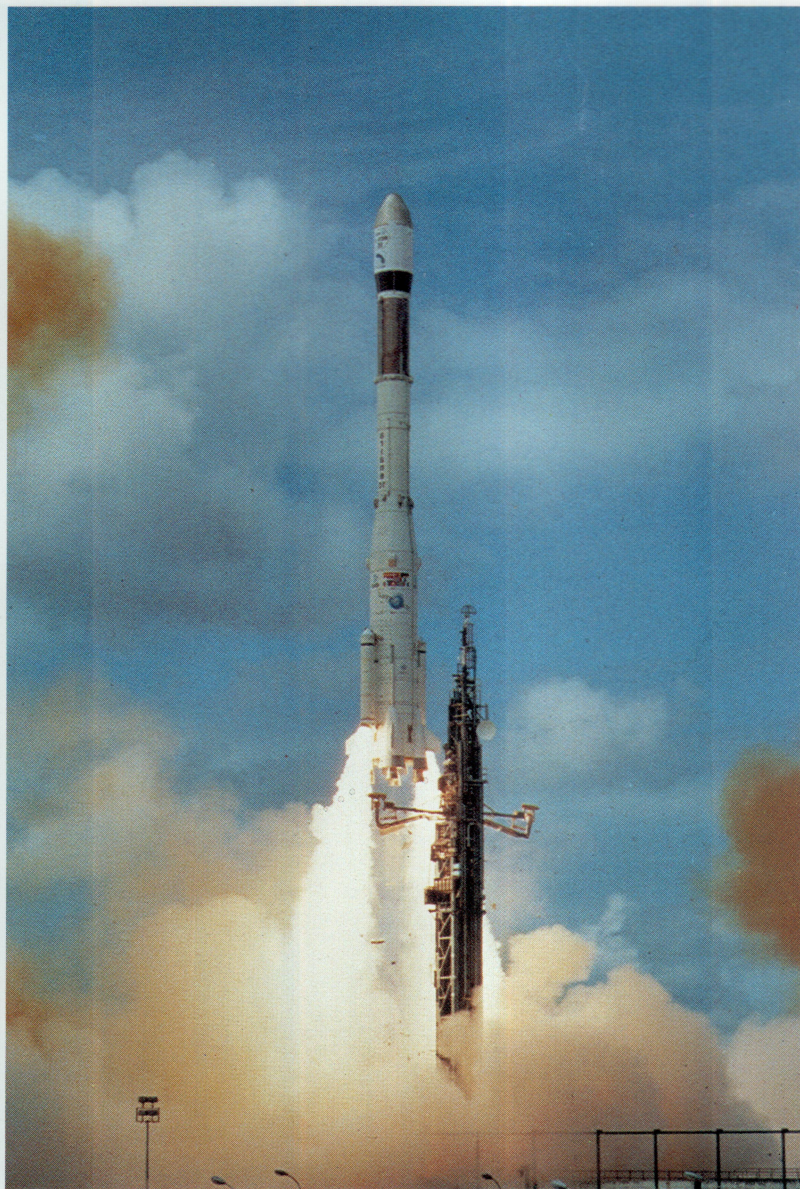
and is financing trials of services like electronic data interchange, videotex and online medical databases.

A number of technological programmes have been adopted under the auspices of the European Regional Development Fund (ERDF) which provides assis-

tance for the community's less-favoured regions. STAR and VALOREN, which concerns local energy resources, are the most advanced. Ireland has been designated as eligible for all ERDF activities and EOLAS is preparing for their implementation.

Other European Programmes

In addition to European Community programmes, Ireland joins in other forms of European technological collaboration, including the Eureka programme, the European Space Agency and the European Science Foundation. EOLAS builds links between the Irish science and technology community and these organisations.



S+T initiatives in Ireland are planned and managed at a national level to ensure that all actions and measures complement each other and avoid duplication. There is, however, an additional need to assist each of the country's regions to capitalise on their strengths and address their technological weaknesses. EOLAS is meeting this need by developing mechanisms for the regions to draw up their own S+T plans and by strengthening the activities of its technology offices in each of the regions

ACTIONS TAKEN AT REGIONAL LEVEL

Company Development Programme

Knowing how to manage technology is no less important than knowing how to develop and select it. EOLAS works with companies in the regions to help them set and achieve targets for quality improvement, cost reduction and the introduction of new and improved products. The Agency takes a proactive approach at local level co-operating with other State organisations through Regional Development Boards.

*

Technology Audits

Selected indigenous companies are encouraged to undergo detailed assessments of their capabilities and limitations by experienced industrial engineers. The service draws attention to deficiencies and suggests how these might be addressed by management. The firms pay a small fee for this consultancy service but the bulk of the expense is covered by the State.

*

Campus Infrastructure

EOLAS is assisting third level colleges to develop facilities in which new technologically-based enterprises can grow. The aim of this action is to encourage the formation of more campus companies and support their early development.

The SERTEC Model

In 1987 the southeast region, which has a weak technological base, was nominated as the location of a pilot study for a proposed EC programme, STRIDE, in an attempt to diagnose the development potential of a region and improve its infrastructure for innovation.

The result is the South East Regional Technology programme (SERTEC), funded by the Office of Science and Technology and managed by EOLAS. At policy level the project has drawn together industry, state agencies and Higher Education colleges in the region. These are all contributing to a strategic development plan for the future of technology in the south-east.

On the ground, meanwhile, SERTEC has stimulated a wide range of specific project proposals. These range from applied technology in strawberry growing and horse breeding to support

services for design engineers and computer integrated manufacturing projects. The programme also encourages firms in the region to consider transnational technological cooperation and closer linkages with third level colleges.

SERTEC, which is concentrating on the potential for small and medium enterprises, offers a model that may be followed by other regions. EOLAS intends to lead the way into new technology initiatives at regional level.

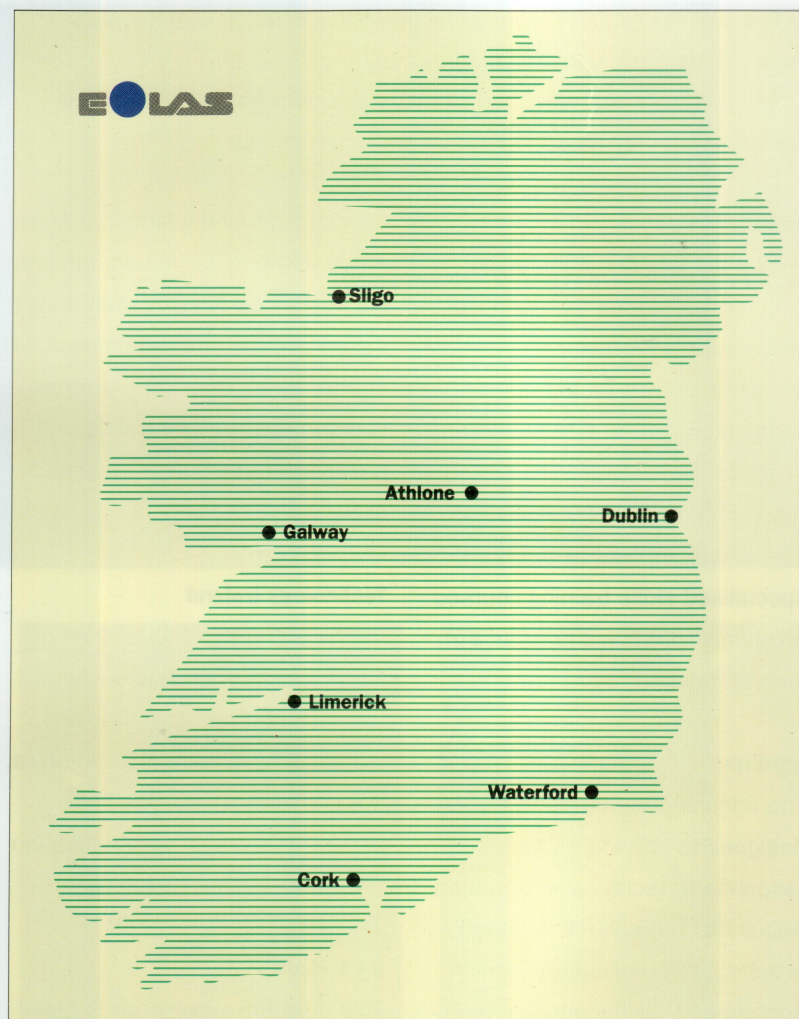
EOLAS in the Regions

The Agency operates technology offices at six centres outside Dublin, a construction laboratory in Cork and a water laboratory in Shannon.

A strengthening of the Regional Technology Offices is planned for the early nineties as part of an EOLAS campaign to take its programmes, schemes and services closer to the organisations that

need them. Regional office staff visit local companies, introduce them to research and technologi-

cal services in their own areas and link them into national and international initiatives.



EOLAS keeps the S+T community in Ireland in touch with developments at both the national and international levels through its publications, its library and database services and through a wide range of special events for target industries and academic groups.

Industrial Education

The Industrial Education Programme addresses the technical information needs of Irish industry through services for individual companies and for groups of firms in specific industries. EOLAS runs conferences, seminars and workshops, backed up with specialised skills training courses on clients' premises or at its own laboratories.

Infolink

The Infolink programme is designed to provide a rapid response to technical information enquiries. The service is based around a reference library which contains 4,000 handbooks, directories, trade and technical magazines, and EC publications and has access to a library of national and international standard speci-

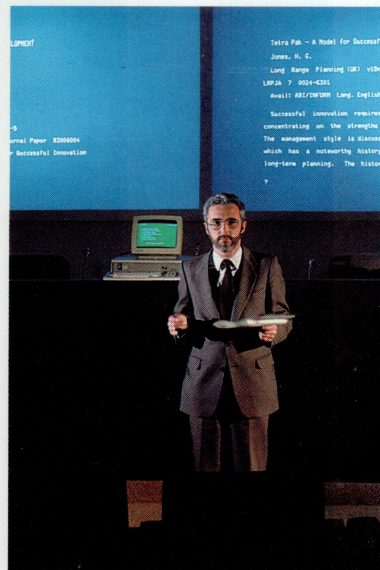
cations held by the National Standards Authority of Ireland. Infolink also draws on international databases and its information desk will answer direct enquiries, arrange in-depth literature searches and provide introductions to technical experts.

Technology Ireland

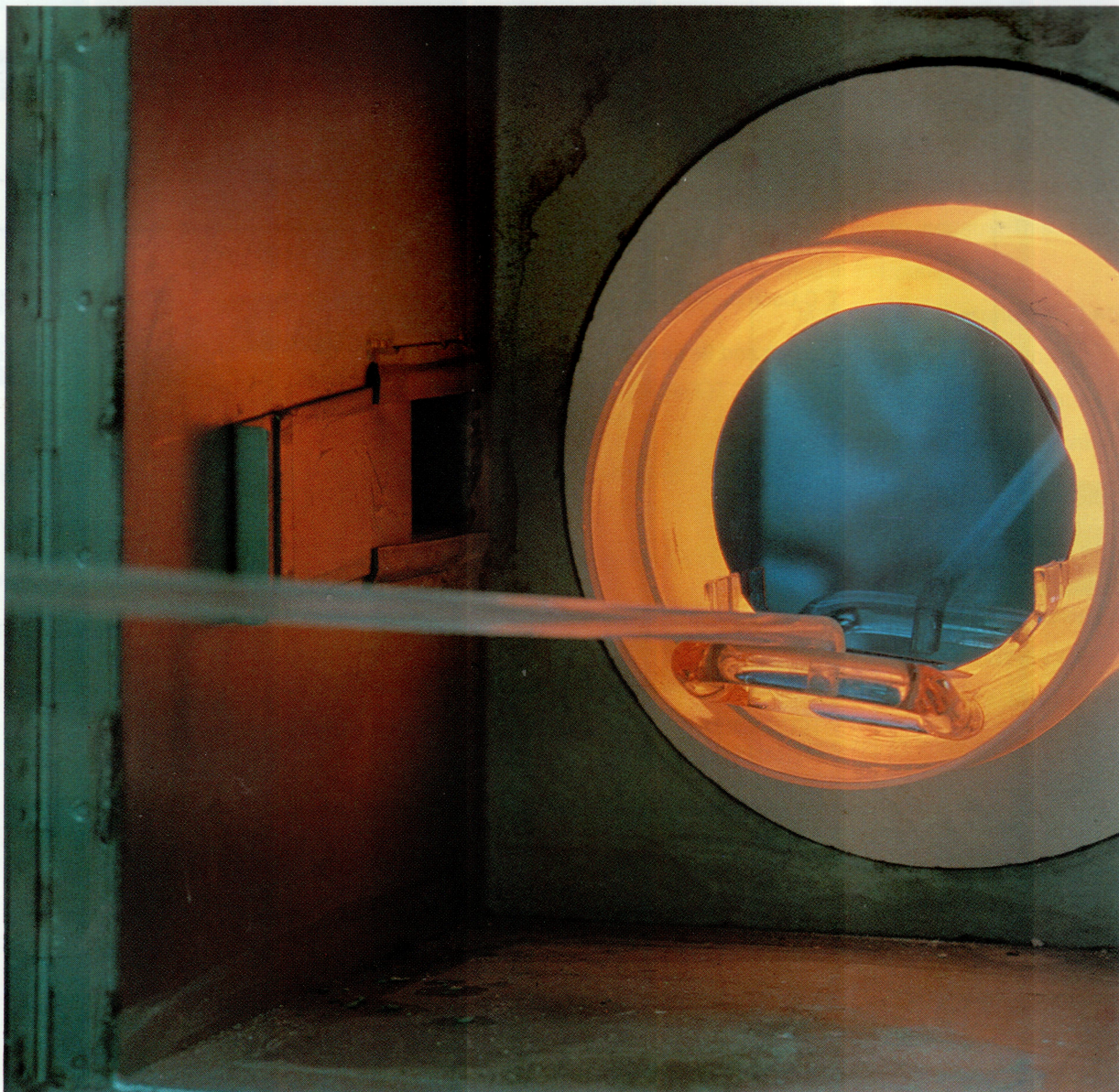
Technology Ireland, published by EOLAS, is a magazine designed to highlight major scientific and technical developments and news. It has a wide circulation and serves as a major communication vehicle for Irish S+T interests.

S+T News

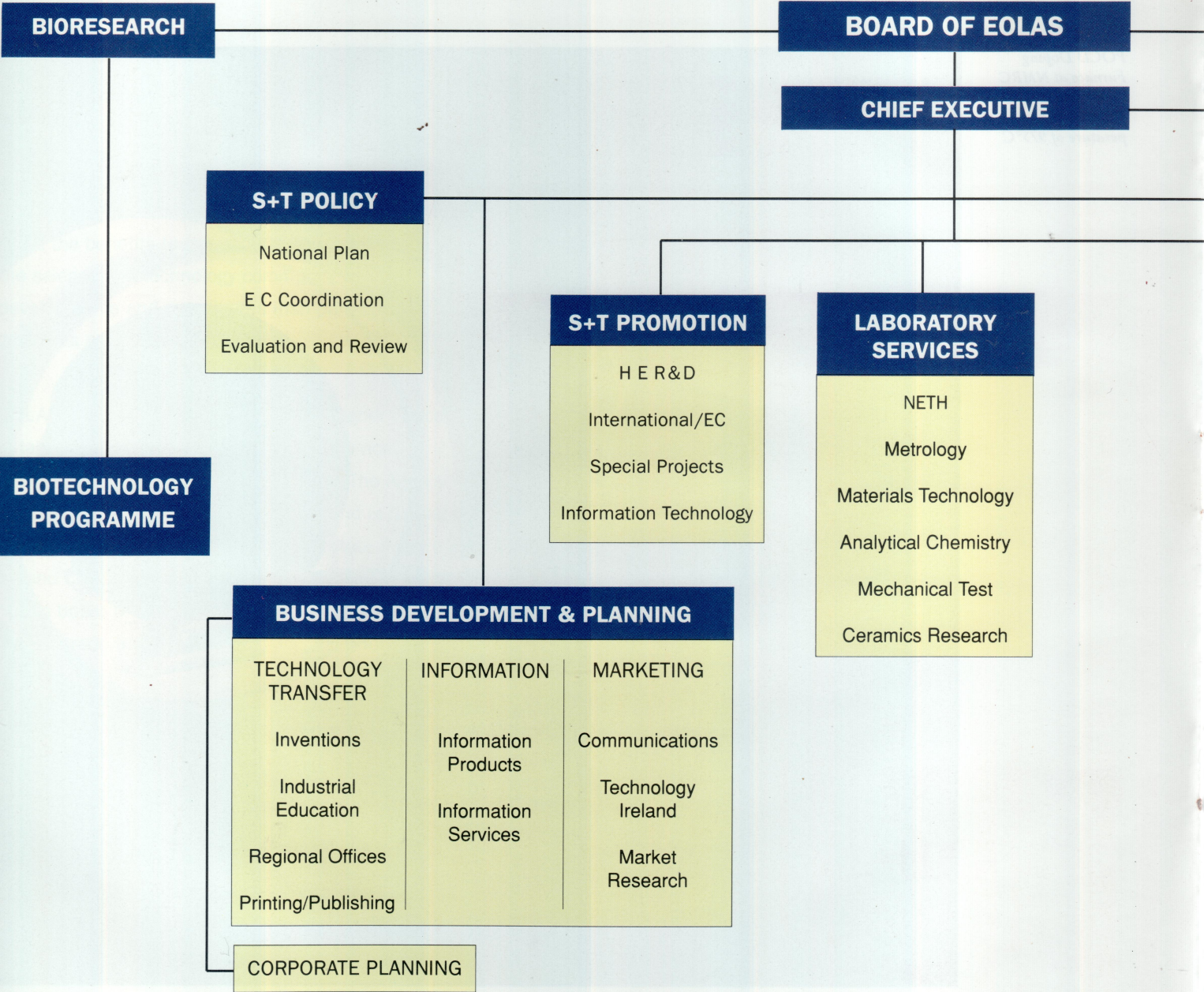
This quarterly newsletter is published by EOLAS to brief research workers in the Higher Education sector on sources of R&D finance, at national level and via the EC.



*POCl₃ Doping
Furnace at NMRC
used to dope silicon
wafers at a tem-
perature of 975°C*



EOLAS Organisation Chart



NSAI BOARD

JOINT PARTICIPATION COUNCIL

PERSONNEL

TECHNICAL & CONSULTANCY SERVICES

ENGINEERING	ENERGY	ENVIRONMENT	CONSTRUCTION & TIMBER
Manufacturing	International	Water	Concrete
Offshore	Industrial/Dublin	Air	Construction
Linkage	Industrial/Cork	Shannon Lab	Forest Products

NSAI

STANDARDS DEVELOPMENT	APPLICATIONS
Quality Standards	Certification Inspection
Energy & Informatics	ILAB
	Agrément

MEMBERSHIP

FINANCE & SERVICES

FINANCE	SERVICES
Accounts	Computers
Purchasing	Buildings
	Secretariat



*J McBride
Chief Executive*

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Galway	091-55138	091-51515
Sligo	071-61219	071-61896
Athlone	0902-74959	0902-74516

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